

John Uhler Jr. Penns<sup>a</sup>.  
Intermittent Fever -

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John H. H. H.

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An  
Inaugural Essay,  
on  
Intermittent Fever,  
Submitted  
To the examination  
of the  
Provost, Trustees and Medical Faculty  
of the  
University of Pennsylvania.  
on the 12<sup>th</sup> day of February 1822.  
for  
The Degree  
of  
Doctor of Medicine;  
by  
John Nelson Jun<sup>r</sup>  
of the  
City of Philadelphia.

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## On Intermittent Fever.

The causes and cure of this disease have been so fully and ably investigated by every intelligent writer on this subject - so that but little remains for me to say which can throw light on its pathology, or curative means - but if what can be said - should prove advantageous to the practitioner - the author will be satisfied with having endeavoured to lighten the sum of human calamity. —

By Intermittent fever, we mean that form of disease, in which there is a succession of paroxysms, between each of which, a perfect and distinct suspension of febrile symptoms takes place. This interval is termed the apexia: different names, have been assigned to the fever, according to the length of this interval. When there is an interval of 24 hours, between the paroxysms, it is termed quotidian; when

forty-eight hours, a tertian; and when seventy-two hours, intermits, or an attack on the first and fourth days, it is termed a quartan. Of each of these primary types, there is an endless variety enumerated by authors. The double tertian, the double and triple quartan. The double tertian, with two paroxysms on one day, and another on the next. The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day. The double quartan, with a paroxysm on the first day, another on the second, but none on the third. The triple quartan, with three paroxysms every fourth day. The triple quartan with a paroxysm every day, every fourth paroxysm being alike.

Some of the ancient writers enumerate a still greater variety, as cases, in which the interval between the paroxysms, was extended to the fifth, sixth, seventh and eighth days, and

others of one and two months and even a year,  
confining on these cases, the titles of menstrua,  
bimemstrua and annua. —

These cases but seldom occur, and appear  
to be anomalous deviations, from the usual  
character of this disease. —

The spring and autumn, are the season in  
which this disease most generally prevails, and  
accordingly is termed vernal and autumnal,  
as it occurs in the spring or fall. The vernal  
yields more readily to remedial measures. —

In obstinate and long continued cases, which  
resist almost every mode of treatment, and  
especially in warm climates, they often give  
rise to several chronic affections, as anasarca  
swellings, enlargement of the Liver or Spleen &c.

The tertian is the most common form and is  
most easy of cure, the quotidian, is next in both  
respects, the quartan, seldom occurs, and is  
difficult in the management. —

The most usual time of the paroxysms, in the different forms of intermittent fever, is as follows. A quotidian, comes on in the morning about eight o'clock, the tertian, about noon, and the quartan in the evening.

A paroxysm of intermittent fever, is divided into three stages, the cold, hot, and sweating stages. —

The cold stage commences, with languor, a sense of debility, and a sluggishness in motion, frequent yawning and stretching and an aversion to food. The face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over every part of the body, appears constricted as if cold had been applied to it. At length the patient feels very cold and universal rigors come on, together with pain in the head, back, loins, and joints, nausea, and vomiting of bilious matter, the respiration is small, frequent,



and anxious; the vision is almost colourless; sensibility is greatly impaired; the thoughts somewhat confused; and the pulse frequent, and often irregular. In a few instances drowsiness and stupor have prevailed in so high a degree, as to resemble coma or apoplexy; but this is by no means usual. —

The first stage, continues for one or two hours, when the symptoms abate, and the second stage comes on. This is marked by a suffusion of heat over the surface of the body, redness of the face, throbbing of the temples, pain in the head, dryness of the skin, the tongue furrowed, anxiety and restlessness, and some tendency to delirium. The pulse slowly rises, and at length it becomes strong, voluminous and exceedingly vehement. —

As in the first stage, these symptoms continue for some time, but at length moisture appears on the forehead, and is soon

followed by a general diaphoresis. — The heat then abates, the thirst ceases, the respiration becomes free, the circulation tranquilized, and the functions are generally restored to their healthy condition, though generally leaving behind more or less debility. Such is the most usual form of a paroxysm of intermittent fever.

But like other diseases, anomalous cases sometimes occur. Clyburn and Senne, mention cases, in which the cold stage was absent, the same has been observed with regard to the hot stage. It has likewise been asserted, that in some cases, the hot has preceded the cold stage. —

Dr Jackson, observes that a paroxysm sometimes terminates by a copious secretion of urine, or evacuation from the bowels, with or without perspiration. —

Other irregularities are sometimes observed, they have been known to attack some one

part of the body, whilst the rest of the system remained unaffected. — an intermittent sometimes attacks the leg, which goes through the cold hot, and sweating stages.

Dr. Chipman says he has seen a same affection more than once attack a tree. Even other day, those on, and were affected with extreme pain, which after awhile removed and a complete cure could be produced, only by the remedies, which cure intermittent fever.

He also mentions a case (in his lectures) of a Lady, who consulted him on account of a violent pain, which she felt every other day in the lower part of the abdomen. The pain, from the south, which led him to conjecture that it might be another case of irregularity of intermittent fever. After every other remedy usually employed had failed, he cured her by the use of Fowler's solution. —

It is pretty generally admitted at the present

day, that the most common cause of  
intermittent fever is, Mass Exhalations.

An Italian writer <sup>Lamberti</sup> ~~Subiaco~~, first suggested  
this idea, when he once received written  
confirmation from some writers upon this subject  
that miasma is emitted from animal and  
vegetable matter in a state of putrefaction.

This miasma may be carried by a current  
of air, to the distance of eight or ten miles, in a  
"sufficiently active state to <sup>produce</sup> this disease, which  
accounts for the disease frequently appearing  
at a distance from any obvious cause.

But there are other causes which sometimes  
produce intermittent, as a low diet, great  
fatigue, long watching, grief, much anxiety,  
debility, exposure to cold, living in damp  
rooms, wearing damp clothes, a warm, moist  
cold, or damp atmosphere, the recession of  
eruptions. The suppression of some long accustomed  
evacuation and infectious diseases, have all

been ranked among the causes of intermittent  
fever. Contusion has been asserted as one of  
its causes. But when contusion proves the  
cause of this disease, it always assumes  
a low type, as it is sometimes found in  
Sails Hospitals, Ships and other crowded ~~are~~.

The influence of the Planets has likewise  
been introduced by authors, as a cause. But  
is equally denied by others. —

Treatment. — The indications of cure in  
intermittent fever, are two. First, to put a stop  
to the present paroxysm, and secondly to  
prevent its return. —

The practice most generally pursued in  
the treatment of this disease is, to commence  
with an emetic, (Dr. Schenck says he would not  
use the emetic in common cases, as the other  
remedies will answer the purpose) then  
which, to administer warm beverages, warm  
applications to the extremities, as bottles filled

with warm water &c. and where some slight  
stimulant is required, wine why should be  
given. —

Oilum — administered in the commencement  
of the cold stage, has been found very useful.  
oilum acts more favourably when combined  
with Ether or  $\text{Oft. ammoniac}$ . The dose for an  
adult, is about thirty drops  $\text{Tinct. Sici.}$  with  
a tea spoonful of Ether or thirty drops of the  
 $\text{Oft. ammoniac}$ . The best time for administering  
these medicines is about an hour before the  
usual time of the paroxysm. —

It is a long time since the  $\text{Tourniquet}$  was  
proposed by Mr. Pott, & since of course, but  
from the total neglect of it at the present day,  
it does not appear to have deserved the high  
eulogiums passed upon it by its author. —

In the treatment of the second stage of the  
eruptive has not been previously administered  
there are two indications of practice to be

purposed. First where there is irritation, caused by bile in the stomach, this should be removed by an emetic or if vomiting has occurred or nausea exists, we should assist nature in the administration of warm beverages as camomile tea &c.

The second indication is to be met by diaphoretics. In Europe, particularly England the Pulvis antimonialis, is highly recommended. In this country the diaphoretic most generally used is the Pulvis Doveri, assisting its operation by the administration of a warm decoction of the *Eupatorium Perfoliatum*.

The *Eupatorium Perfoliatum* alone is a good remedy for producing perspiration, when others cannot be procured. —

Guaiacum alone has been recommended in the 3rd stage, by Leind. Dr Chapman says "Let in pithoric, labials, or those in which much inflammatory action exists the use of opium would be very prejudicial; but in cases of an opposite

nature it is a valuable remedy. Lind, basing  
in a warm climate, where there generally exists  
a relaxed state of the system and a general  
tendency to insensibility, thus the practice is  
certainly correct. —

The *Stimulus Mindereri* is, an exceedingly  
valuable remedy, it acts promptly, and is  
generally grateful to the stomach. The dose is  
a table spoonful. The saturated solution, repeated  
according to the necessity of the case, generally  
given about every hour or two.

The treatment is the treatment necessary in  
ordinary cases of the disease. But when it is  
of an inflammatory character, as it sometimes is,  
the treatment is different. This character is  
generally observed in the spring, and during the  
prevalence of inflammatory epidemics. —

When the case is of the virus mentioned before  
the pulse is vigorous and strong, the face is  
flushed, the respiration difficult and laborious.



and acute pain in the head, sides, or chest. When these symptoms present themselves, copious bleeding is indicated, the stomach and bowels should be evacuated by emetics and cathartics. —

But it sometimes takes on a typhoid character, these cases often occur in hospitals, jails, and other crowded places and during the prevalence of typhus epidemics. — The treatment to be adopted here, is of the cordial and stimulative kind, or those remedies, which are best calculated to support and give tone to the system and to arrest a tendency to a typhus condition. —

We are now to treat of those numerous remedies which are used during the attack, or to prevent a recurrence of the prostration.

The remedy which has always been considered best adapted to this purpose, ever since its introduction into the treatment of this disease, is the Colley Romanum. This article has been and still continues to be considered, by many,

practitioners, a specific in intermittent fever.

But hereafter I shall take an opportunity to show that it possesses some disadvantages, and will introduce an article which possesses many of the virtues and but few of the disadvantages of the Bark.

In the use of the Cortex Peruviana in the cure of intermittents, previous evacuation is generally prescribed, before ~~the~~ it is resorted to. These evacuations are emetics or cathartics, or both: the articles used for this purpose, as Ant. Tort. &c. Purgatives and saunders, after which the exhibition of Bark is immediately commenced in doses of about ʒj or more, every two hours, until the state of the system be too much excited, in which case, we previously reduce the kindly by general bleedings, or by the application of cups or leeches, when a bilious affection exists.

In the administration of the Cortex Peruviana the practitioner has frequently a number of

embarrassing circumstances to contend with,  
the bark not unfrequently, excites nausea and  
vomiting, it is likewise apt to act upon the  
bowels, either producing diarrhea or constipation.  
In the first case it is customary to combine  
it with aromatics, as Sassafras, Bergamot,  
Cinnamon, cloves, nutmegs or Costus  
in Camomile &c and secondly to prevent its  
running off by the bowels it is combined with  
small quantities of Opium, and finally, to obviate  
constipation small doses of Pulvis Rii are used.

There is a total inability in many cases to  
administer it in any shape, in consequence  
of the size of the doze, the irritability of the  
stomach or bowels, and the obstinacy of the  
fever. To some practitioners it has been  
customary in some of these cases to resort to  
the rectum, and for this purpose, the bark has  
been used in form of injection. It has likewise  
been applied to the surface, in different ways,

by lotions of it applied to the stomach, by a warm bath of the decoction either topical or general; by throwing the powder over the chest, by quilling it in a jacket and worn next the body. These different modes of using the bark, are very uncertain. —

*Fowler's Solution* — is generally considered next in importance to the Col. Tonic. it is given some advantages over the other particularly where the bark disagrees with the stomach or where there is rather too much inflammatory action of the system; it may be used in the cases of children, and it is more easily administered than the bark in consequence of its insipidity. But this solution too has its disadvantages, it sometimes produces nausea and vomiting and when long continued will produce anemia. The dose is from six to ten drops, three times a day. —

a case was related to me by a practitioner

residing in the country, of a patient of his, with  
intermittent fever (a strong robust man) who by  
mistake, took a tea spoonful of Fowler's solution,  
there were no alarming symptoms produced,  
and he effectually recovered without having  
another paroxysm of the disease. He concluded  
from this, that the practice might be imitated  
in some measure a few days after, a person  
called upon him, a ~~man~~ who had had a violent  
paroxysm of Intermittent, as he was a very robust  
man, he prescribed, twenty five drops of Fowler's  
solution, to be taken three times a day. The  
patient recovered without having another  
paroxysm. — This practice if extended to  
every case, would doubtless, prove highly  
benign, but it appears to be perfectly safe  
in that particular class of our patients, resembling  
the two cases spoken of. —

It would occupy too great a space in this  
essay, to give a complete history of every article

which has been employed in the cure of this disease. I will merely enumerate the other articles most usually employed, and then introduce to your notice the Semen ammoniacum.

The Serpentina Germiana, has been very highly shaken & by some harshness, it appears to be best adapted to the milder form of the disease. a very good formula for administering it, recommended by Dr Chalmers, is the following

R. Pulv. sol. Powv. — ʒij.

" Rad. Inf. — ʒj.

Carb. Soda. . . . . ʒxxx et

div. in. pulv. Art IV.

one of which is to be taken every three or four hours.

The Eupatorium Perfoliatum, has been recommended it may be so prepared as to be administered in every stage given in powder, decoction or infusion. —

The Chionodoxa Angustaria, has likewise been used, like the above articles, it may be

administered in every stage, given in decoction  
or infusion, as much as the stomach will bear;

The Cornus Virginiana, has been used with  
advantage by some practitioners.

The Eupatorium Tiliaceum. This article is much  
used in the Southern states, it is said to be  
advantageously combined with the peruvian bark,  
though it may frequently be used were bark  
is inadmissible. It is usually given in form  
of infusion: one ounce of the dried leaves, infused  
into a quart of water, may be taken daily, in  
doses of from two to four ounces every hour  
or two. —

The Cornus Florida and Cornus Persea, the  
effects of these articles on the system are similar  
to the peruvian bark, though rather more stimulative.  
They are closely allied to the peruvian bark in  
their sensible and chemical qualities. — The bark  
of each species of Cornus may be exhibited in  
all the forms in which the peruvian bark is

used, and nearly in the same dose.

The Pinos Verticillatus, has been highly recommended by some writers, given in the same manner as the Peruvian bark. —

The bark of the different Oaks have been used with success. The dose and manner of administration the same as the peruvian bark. —

The different species of Willow and Polygalas have been much esteemed by some practitioners, <sup>bark of the</sup> ~~London Polygalas~~ <sup>and</sup> ~~peruvian bark~~ much used by Dr Rush, during the revolutionary war, he considered <sup>it</sup> ~~them~~ as little inferior to the peruvian bark. —

The Euphorasia Tetrifuga. was once used with a great deal of confidence. The dose is from a scruple to a drachm, repeated the same as the peruvian bark.

The Cucurbitaria Tetrifuga. has also been described. Kine, has been highly recommended. The following formula is given by Dr Chapman. —

R. Pulv. G. Kine.  $\mathfrak{z}\mathfrak{i}$ . - Pulv Rad Gentian.  $\mathfrak{z}\mathfrak{j}$  -



Pulv. Z. Zinci. gr. ij. M. ac in sub. Sig. one to be taken every two hours during the dyscrisis.

The Carbo Lignis has likewise been very highly recommended, it is said to have been successful, when the Bark and arsenic had failed. Dr Chapman says he would prefer it, where there is any dyscrisis connected with the intermittent. The dose is a tea spoonful of the powder every two or three hours, during the dyscrisis. —

Sulphur, has also been favourably spoken of; among others by Dr Rhynke. Dr Chapman thinks it is not without utility, in the chronic nervous affections, of an intermittent nature. The mode in which he administers it, is in such doses, and at such intervals, that it may not act upon the bowels, about thirty or forty grains every three or four hours. —

The Sulphas Zinci, has been prescribed with advantage. Dr Chapman speaks very highly of

it, in footed or intermittent, and especially in the  
quartan form. —

The Infusum Camphoraceum, has also been  
prescribed by some practitioners. —

The different preparation of Lime, likewise. —  
Alumina is also employed by some, concerning the  
utility of this article a variety of opinions exist,  
some practitioners say it induces nausea and  
others, that it is very grateful to the stomach and  
when combined with aromatics seldom disagrees  
with the system. It is said to be particularly  
useful, when the disease is accompanied with  
an affection of the bowels, as according to them  
is from five to ten grains combined with oil  
but when the stomach will not bear so much, the  
dose must be diminished. —

The Laccharum Saturni, during the late war  
it is said to have been much employed and  
with great advantage by some of the Physicians  
of the army. It is said even ascribed to have

proved superior to arsenic or bromine barks,  
but Dr Chapman says he suspects these accounts  
are exaggerated and his experience with the  
Sacc. latum convinces him that it rarely does  
good. —

The Laba araveri is a narcotic act. as a  
cordial to the system and often produces sleep.  
Dr Jackson recommends it very strenuously.  
The dose is from ~~two~~ five grains in pill given  
every four or five hours. The web of the black  
glides which is formed in allans should be  
detected as it is better than the other species. —

Animal Gluten has had a number of  
advocates in France and England and in  
this country it is said to have proved  
effectual when other remedies have failed. —

Dr Chapman says he has cured cases of  
intermittent fever, which had resisted. Barks,  
arsenic &c. by administering an emetic every day,  
for five, six or seven days. he says it acts by causing

a powerful impression on the stomach and thus breaking up that chain of associated morbid action. —

after all we sometimes meet with obstinate cases, which will not yield to any of the numerous remedies already mentioned.

These obstinate cases generally depend on congestion or other disease of the viscera.

In these cases Mercury has been found a valuable remedy, the salivation should be kept up for two or three weeks.

as a substitute for mercury. Blisters have been found highly useful in some cases.

<sup>They</sup> operate pretty much on the same principle as mercury, by causing a counter impression. They should be applied to the extremities, and not hastily dried up. —

When all our remedies have failed, a last resort is, to a long journey on horseback.

Fasting for six or eight hours, and a reaction

The reverse has sometimes become beneficial. —

I will now introduce an article which has hitherto been little spoken of. The Terrace ammoniacale or Stone Marshes. It is asserted to possess several advantages over the Fowler's Barks in its use.

First, by the smallness of the dose it may be formed into pills. Secondly it is not so liable to produce nausea and vomiting as either the pure bark or Fowler's solution, which is certainly a very important circumstance for as has been before said we frequently meet with cases of intermittent fever in which it is impossible for the patient to retain even a very small quantity of bark. I have seen a case in which the patient laboured under this disadvantage, the Fowler's solution, bark in substance, tincture or decoction, produced so much nausea and vomiting that I was compelled to lay them aside, although the dose of either was very small. I commenced

the use of the *Ferrum ammoniacale*, the patient was able to bear it on his stomach without producing nausea, and he recovered in a few days. The common dose is about two grains in form of pill given three times a day during the apyrexia. It will sometimes be necessary gradually to increase the dose.

My Brother Dr. Joel Whittier, for the last two or three years has been in the practice of prescribing the *Ferrum ammoniacale* in a large number of cases with uniform success, in many of which the arsenic and every preparation of bark had failed. —

When I commenced this essay, I intended to have added the history of a number of these cases, but unfortunately my Brother did not record them, which precludes the possibility of giving a detailed account.

But from the experience of my Brother with the article, and from what I have myself seen

of its beneficial effects, I am led to believe it, as  
valuable acquisition in the cure of intermittent  
fever, certainly a very distressing affection. —

D Knight, of this city has favoured me with  
the following communication, on the use of the Tonic tartar.

"agreeably to your request I will briefly state  
the result of my experience in the use of this  
Tartrate of Iron, — within the last two years I have  
frequently prescribed that medicine in various  
forms of disease in which a tonic treatment  
appeared to be indicated, and have found it as  
efficacious as any of the chalybeate preparations,  
while its perfect solubility in water and being  
free from any unpleasant taste, gives it in many  
cases a decided advantage over those in  
common use — particularly in the treatment  
of the diseases of children. —

During the late autumnal epidemic I had  
several opportunities of witnessing its good effects  
in Intermittent Fever, one of the most difficult

cases of the disease that came under my notice was that of my own daughter, (aged eight years) she resided during the summer in Germantown, where she contracted the disease prevailing at that place and was brought to this city a few days after her attack (on the 11<sup>th</sup> October) the disease put on the simple tertian form, having promised proper evacuation I attempted to administer the Ainslie's, but on account of the extreme irritability of her stomach and general aversion to medicine that I found it impossible to get any of this medicine to remain on her stomach, although a variety of preparation and combinations were tried - Trist. opii. in anticipation of the fit was used several times without success, - Arsenic was next used, but although she took only five drops three times a day, in about three days she became affected with general oedematous swelling, which detained me from continuing the use of that article - upwards of two weeks have now elapsed in making fruitless attempts to arrest



the disease, while her appetite and general strength had failed to an alarming degree - and the fever had assumed the double tertian form - I now prepared a solution of the Tincture of Iron - two drachms of the tincture to six ounces of sweetened water, she took a table spoonful every three hours - she took the medicine without difficulty and it was retained on her stomach, the third day after she began its use, she wiped her chilly and was soon convalescent - she continued the medicine twice a day two weeks, and has since enjoyed an unusual degree of health. -

A few days after her recovery I was called to a child of Mr J. D. R. - girl 4 years - also affected with tertian fever - an Emetic and the solution of Tincture of Iron were the only medicines prescribed - the child had only three paroxysms. -

Two other cases that occurred in the month of October were treated with the Iron, with the same success. -

the